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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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MCDONNELL BOEHNEN HULBERT & BERGHOFF LLP
300 S. WACKER DRIVE
32ND FLOOR
CHICAGO, IL 60606

EXAMINER
WYROZEBSKI LEE, KATARZYNA I

ART UNIT	PAPER NUMBER
1714	

DATE MAILED: 10/27/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/034,807	STADTMUELLER, LISA	
	Examiner	Art Unit	
	Katarzyna Wyrozebski	1714	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *24 August 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-12,15-27 and 30-32* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-12,15-27 and 30-32* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

In view of applicant's Request for continuing prosecution following non-final office action is issued.

The prior art of LAN as applied against present claims is overcome by applicant's amendment, since as applicants pointed out, it utilizes multi-charged ammonium compounds.

The examiner would like to point out that the present claims contain limitations of intended use and product by process language.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. Claims 1-12, 17-21, 27, 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over GUZAUSKAS (US 6,433,037) in view of TSIPURSKI (US 5,721,306).

The prior art of GUZAUSKAS discloses composition for use in dentistry, which comprises polymeric component and filler.

Polymeric components include acrylic resins (col. 10) in amount of at least 30-75 wt % (col. 11, lines 60-65). Although acrylic resin can be the only one that is used, other polymeric components can include PVOH, vinyl polymers and the like (col. 12, lines 45-62).

Fillers utilized in the composition of GUZAUSKAS include fibers and various types of clays, micas or silicates (col. 17, lines 10-20). Fillers are typically utilized in at most 30 wt%.

The difference between the present invention and the disclosure of the prior art of GUZAUSKAS is recitation of modified clay.

With respect to the above argument the prior art of TSIPURKY discloses composition that can be utilized in pharmaceutical composition comprising organoclay. Such teaching shows that organically modified clay is safe for administration to human body.

The clay of TSIPURSKY is smectite type clay such as montmorillonite, nontronite, beidelite, volkonskoite, hectorite and the like (col. 10, lines 44-49). Line 10 further continues that such clays are either in intercalated or exfoliated form. Clays are treated with cationic compound, in order to increase the basal spacing of the clay platelets. Such cationic compounds include ammonium salts (col. 14, lines 60-64).

Use of clays in dental compositions is disclosed in the prior art of GUZAUSKAS. TSIPURSKY further teaches that the use of such clays is suitable for administration to human.

In the light of the above disclosure, it would have been obvious to one having ordinary skill in the art at the time of the instant invention to utilize clays of TSIPURSKY in the composition of GUZAUSKAS and thereby obtain the claimed invention. Use of different forms of clays is suggested by the prior art of GUZAUSKAS.

5. Claims 15, 16, 27, 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over GUZAUSKAS (US 6,433,037) in view of TSIPURSKI (US 5,721,306) as applied to claims 1-12, 17-21, 27, 31 above, and further in view of MOORMAN (US 5,319,014).

The discussion of the disclosure of the prior art of GUZAUSKAS and TSIPURSKY from paragraph 4 of this office action is incorporated here by reference.

The difference between the present invention and the disclosure of GUZAUSKAS and TSIPURSKY is presence of coupling agents and different ammonium compounds capable intercalating clay component.

With respect to the above difference, the prior art of MOORMAN discloses composition comprising acrylic monomer and clay filler.

Clay of MOORMAN is an organophilic clay, which is intercalated with primary or tertiary amines *via* cation exchange (col. 4). Clay of MOORMAN when modified comprises stearyl and benzyl moieties (col. 5).

MOORMAN also teaches use of silane coupling agents such as methacryloxypropyl trimethoxy silane. These compounds are utilized to provide increased adhesion between the clay platelets and the polymeric matrix.

Use of silane coupling agents increases adhesion properties between filers and polymeric matrix.

In the light of the above disclosure, it would have been obvious to one having ordinary skill in the art at the time of the instant invention to utilize coupling agents and other intercalating quaternary ammonium compounds in the composition of GUZAUSKAS and TSIPURSKY and thereby obtain the claimed invention. Use of such components would still provide functional dental composition.

6. Claims 27, 30, 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over GUZAUSKAS (US 6,433,037) in view of TSIPURSKI (US 5,721,306) as applied to claims 1-12, 17-21, 27, 31 above, and further in view of KAWASUMI (US 4,810,734).

The discussion of the disclosure of the prior art of GUZAUSKAS and TSIPURSKY from paragraph 4 of this office action is incorporated here by reference.

The difference between the present invention and the disclosure of GUZAUSKAS and TSIPURSKY is recitation of aminododecanoic acid as modifier for clay.

With respect to the above difference, the prior art of KAWASUMI discloses composition and intercalated clay. The clay is treated with ammonium compound, which is aminoacid. Specifically 12-aminododecanoic acid (col. 3).

Use of protonated aminododecanoic acid will also result in intercalation and exfoliation of clay platelets, since such compound is also capable of increasing basal spacing between clay platelets.

In the light of the above disclosure, it would have been obvious to one having ordinary skill in the art at the time of the instant invention to utilize aminododecanoic acid of KAWASUMI in the disclosure of GUZAUSKAS and TSIPURSKY and thereby obtain the claimed invention. Use of such compound would also result in intercalation and exfoliation of clay component.

7. Claims 22-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over GUZAUSKAS (US 6,433,037) in view of TSIPURSKI (US 5,721,306) as applied to claims 1-12, 17-21, 27, 31 above, and further in view of IKUSHIMA (US 5,869,548).

The discussion of the disclosure of the prior art of GUZAUSKAS and TSIPURSKY from paragraph 4 of this office action is incorporated here by reference.

The difference between the present invention and the disclosure of GUZAUSKAS and TSIPURSKY is recitation of the types of dental articles in which the acrylic/mineral aluminosilicates composite can be utilized.

With respect to the above argument, the prior art of IKUSHIMA discloses composite comprising acrylic polymer and aluminosilicates such as bentonite.

The composition is utilized to make artificial tooth, an inlay, crown, bridge, and the like (see Abstract).

Acrylic composition comprising mineral aluminosilicates is type of composite that can be utilized in various specific articles.

In the light of the above disclosure it would have been obvious to one of ordinary skill in the art at the time of the instant invention to utilize the acrylic/mineral aluminosilicates composition of GUZAUSKAS and TSIPURSKY in the articles of IKUSHIMA and thereby obtain the claimed invention. Such composition, which is also acrylic/mineral aluminosilicate is expected to provide good dental article disclosed in IKUSHIMA.

8. Claim 32 is rejected under 35 U.S.C. 103(a) as being unpatentable over GUZAUSKAS (US 6,433,037) in view of TSIPURSKI (US 5,721,306) as applied to claims 1-12, 17-21, 27, 31 above, and further in view of ANDERSON (US 6,156,835).

The discussion of the disclosure of the prior art of GUZAUSKAS and TSIPURSKY from paragraph 4 of this office action is incorporated here by reference.

The difference between the present invention and the disclosure of GUZAUSKAS and TSIPURSKY is recitation of different types of ammonium compounds that can be equally utilized to intercalate clay component.

With respect to the above argument, the prior art of ANDERSON discloses polymer composition comprising intercalated clay. The clay is intercalated with ammonium cation (col. 6) comprising octadecyltrimethyl ammonium, dihydroxyethyl methyl octadecyl ammonium , dihydroxyethyl methyl hydrogenated tallow ammonium and the like.

These compounds due to their cationic nature are capable of intercalating between clay platelets, undergoing cation exchange and thereby result in organically modified clay having increased basal spacing.

In the light of the above disclosure it would have been obvious to one having ordinary skill in the art at the time of the instant invention to utilize the ammonium compound of ANDERSON in the composition of GUZAUSKAS and TSIPURSKY and thereby obtain the claimed invention. Use of such ammonium cations would also result in exfoliated clay when utilized with polymeric composite.

Claim Objections

9. Claim 26 is objected to because of the following informalities: Claim 26 refers to the dental material, however at the same time it recites orthopedic appliance. It is not clear how an orthopedic appliance is dental. Appropriate correction is required.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Katarzyna Wyrozebski whose telephone number is (571) 272-1127. The examiner can normally be reached on Mon-Thurs 6:30 AM-4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on (571) 272-1119. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Katarzyna Wyrozebski
Primary Examiner
Art Unit 1714

October 21, 2004